

## REMARKS

Reconsideration of the application is respectfully requested.

Claims 1, 5-8, 10-15 and 46 are before the Examiner. Amendments to the Claims are shown based on Claims 1-45 of the corresponding issued U.S. Patent No. 6,271,323 ("US-323".) Claims 1, 5, 6, 7, and 8 have been amended as previously discussed in the RCE filed October 12, 2007. Claims 2, 3, 4, and 9 have been cancelled. New Claim 46 has been previously added. Claims 1, 5-8, 10-15 and 46 remain in the instant application.

In the instant response, Claim 1 has been further amended to replace the term " $C_2$  to  $C_{20}$  alkyl group" with the term " $C_2$  to  $C_{20}$  alkylene group", as suggested by the Action. Support for this amendment may be found at Col. 5, lines 29-32 of US-323. In addition, consistent with the RCE filed October 12, 2007, Claim 1 has been amended to further clarify that the recited catalyst system comprises a Group 15 containing tridentate ligated hafnium catalyst compound as previously recited in original Claim 4 of the instant application. Support for this amendment may be found, for example, at Col. 4, lines 56-57 of US-323. The term "metallocene type", resultant from a previous amendment, and objected to by the Office Action, has been amended to remove the word "type" consistent with the claims of US-323.

Claim 5 has been amended to properly depend from Claim 1.

Claims 6 and 7 have been amended to further clarify Applicants' presently claimed invention. Support for these amendments may be found, for example, at Col. 5, lines 39-57 of US-323, as previously discussed in the Response dated February 12, 2004.

Claim 8 has been amended to further limit  $R^1$  and  $R^2$  to a preferred embodiment. Support for this amendment may be found, for example, at Col. 5, lines 57-58 of US-323.

New Claim 46 has been added to recite a preferred embodiment of Applicants' presently claimed invention. Support for this amendment may be found, for example, at Col. 5, line 39 to Col. 6, line 40 of US-323.

No new matter has been added.

### **Double Patenting**

Claims 1, 5-8, 10-15 and 46 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-38 of U.S. Patent No. 6,271,325 to McConville (hereinafter "McConville-325".) Upon indication of allowable subject matter in the present case, a Terminal Disclaimer will be filed as appropriate.

Claims 1, 5-8, 10-15 and 46 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-14 of U.S. Patent No. 6,300,439 to McConville (hereinafter "McConville-439".) Upon indication of allowable subject matter in the present case, a Terminal Disclaimer will be filed as appropriate.

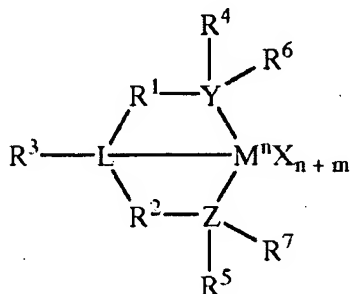
### **Rejection under 35 U.S.C. §102**

The Action has maintained the rejection of Claims 1, 5-8, 10-15 and 46 under 35 U.S.C. §102(e) as being anticipated by McConville-325. Applicants respectfully disagree.

Applicants recite, *inter-alia*, "a process for polymerizing olefin(s) comprising combining said olefin(s) in the presence of a catalyst system comprising a Group 15 containing tridentate ligated hafnium catalyst compound...and a bulky ligand metallocene catalyst compound..."

McConville-325 is generally directed to a composition of matter and a polymerization process comprising combining an olefin in the gas or slurry phase with an activator, a support and a compound having the same general formula as recited in the presently claimed invention. However, McConville-325 fails to disclose or suggest combining the Group 15 containing catalyst compound with Applicants' recited bulky ligand metallocene catalyst compound. The Action points to the Abstract, and Claim 1 of McConville-325. In Claim 1, McConville discloses:

"1. A polymerization process comprising combining in the gas or slurry phase an olefin with an activator, a support and a compound represented by the following formula:



wherein M is a group 3 to 14 metal,  
 each X is independently an anionic leaving group, n is the oxidation state of M,  
 m is the formal charge of the YZL ligand,  
 Y is a group 15 element,  
 Z is a group 15 element,  
 L is a group 15 or 16 element,  
 R<sup>1</sup> and R<sup>2</sup> are independently a C<sub>1</sub> to C<sub>20</sub> hydrocarbon group, a heteroatom containing group, silicon, germanium, tin, lead, or phosphorus,  
 R<sup>1</sup> and R<sup>2</sup> may also be interconnected to each other,  
 R<sup>3</sup> is absent, or is hydrogen, a group 14 atom containing group, a halogen, or a heteroatom containing group,  
 R<sup>4</sup> and R<sup>5</sup> are independently an aryl group, a substituted aryl group, a cyclic alkyl group, a substituted cyclic alkyl group, or a multiple ring system,  
 R<sup>6</sup> and R<sup>7</sup> are independently absent, hydrogen, halogen, a heteroatom, a hydrocarbyl group, or a heteroatom containing group."

Accordingly, McConville-325 does disclose a catalyst system similar to Applicants' recited Group 15 containing tridentate ligated hafnium catalyst compound.

However, McConville-325 further discloses:

"[t]he intense commercialization of metallocene polyolefin catalysts (metallocene being cyclopentadienyl based transition metal catalyst compounds) has led to widespread interest in the design of non-metallocene, homogeneous catalysts, particularly for use in the economical gas and slurry phase processes. This field is more than an academic curiosity as new, non-metallocene catalysts in gas or slurry phase may provide an easier, more economical pathway to currently available products and may also provide product and process opportunities

which are beyond the capability of metallocene catalysts in the gas or slurry phase.”

McConville is thus directed to improvements over metallocene catalysts. Other than the above paragraph, McConville-325 is silent with regard to metallocene catalysts. Not only does McConville-325 fail to disclose or suggest combination of a Group-15 containing tridentate ligated hafnium catalyst compound with a metallocene, McConville-325 fails to disclose or suggest, or for that matter even mention Applicants’ recited bulky ligand metallocene catalyst compound. McConville-325 thus fails to disclose or suggest all of Applicants’ recited limitations, but is instead directed to improvements over metallocene catalysts. By differentiating the Group-15 containing tridentate ligated hafnium catalyst compound from metallocene catalyst compounds, McConville-325 actually teaches away from Applicants’ presently claimed invention wherein the two are combined. Accordingly, McConville-325 cannot be found to anticipate the instant claims. Applicants respectfully request that the rejection be withdrawn.

Claims 1, 5-8, 10-15 and 46 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,294,495 to Matsunaga (hereinafter “Matsunaga”). Applicants respectfully disagree.

Matsunaga is directed to an activated tridentate mono-anionic-ligand-based transition metal catalyst in a reduced oxidation state for olefin polymerization. Matsunaga fails to disclose or suggest Applicants’ recited process comprising a Group 15 containing catalyst compound. In particular, Applicants’ recited limitation wherein  $R^1$  and  $R^2$  are independently a linear, branched, or cyclic  $C_2$  to  $C_{20}$  alkylene group. Matsunaga only discloses an alkenyl group between the center ligand ( $E'$ ) and the outer ligand ( $E$ ) of the structure shown in Matsunaga. In particular, Matsunaga only discloses compounds wherein  $E$  is a portion of an aromatic ring. This is in contrast to Applicants’ presently claimed invention. Furthermore, Matsunaga fails to disclose or suggest combination of a Group 15 containing catalyst compound with a bulky ligand metallocene catalyst. Matsunaga thus fails to disclose or suggest all of Applicants’ recited limitations. Accordingly, Matsunaga cannot reasonably be found to anticipate the instant claims. Applicants respectfully request that the rejection be withdrawn.

Application No.: 10/777,562  
Response dated: February 19, 2009  
Reply to Office Action May 18, 2009

The cited prior art fails to disclose or suggest all of the limitations recited in Applicants' presently claimed invention. Applicants respectfully request that all rejections be withdrawn and solicit a prompt notice of allowability. In the alternative, Applicants invite the Office to telephone the undersigned attorney if there are any other issues outstanding which have not been presented to the Office's satisfaction.

Respectfully submitted,

May 18, 2009

Date

/Leandro Arechederra, III/

Leandro Arechederra, III  
*Attorney for Applicants*  
Registration No. 52,457

Univation Technologies, LLC  
5555 San Felipe, Suite 1950  
Houston, Texas 77056-2746  
Phone: 713-892-3729  
Fax: 713-892-3687